



# EM RECOVERY NEWS

American Recovery & Reinvestment Act Newsletter

May 2011 | Issue 24

## Moab Mill Tailings Project Marks Many Recovery Act Accomplishments



Two scrapers work together to excavate Mancos Shale at the Crescent Junction site to create the second portion of a disposal cell for uranium mill tailings.

**MOAB, Utah** – Moving 2.4 million tons of uranium mill tailings away from the Colorado River is only one of the activities the Moab Uranium Mill Tailings Remedial Action Project accomplished with \$108 million from the American Recovery and Reinvestment Act.

The Moab Project has achieved numerous accomplishments in Recovery Act-funded efforts to help move the tailings safely and efficiently to a permanent disposal facility near Crescent Junction, 30 miles north of the Moab site.

The Recovery Act funded the construction of an underpass of a state highway specifically for project vehicles, which mostly include haul trucks carrying the tailings. The underpass was a significant safety enhancement because it eliminated the intersection of the project haul road and the public highway. In addition, the travel time of project trucks is now reduced because they don't have to stop at the crossing.

The Recovery Act also supported paving projects that reduced road maintenance costs. Workers paved access and haul roads and other locations, such as the area where tailings are moved from railcars to trucks. Paving roads lessens wear on the trucks and minimizes the amount of water needed for dust suppression.

The Moab Project also used Recovery Act funds to purchase additional equipment, including a second American-made

**“ Our Recovery Act project commitments were to ship an additional 2 million tons of tailings and support 160 jobs. We went beyond both of those commitments. ”**

*Moab Federal Project Director Donald Metzler*

gantry crane to increase the efficiency of moving tailings containers to and from the railcars. The addition of a second crane helps maintain operations if one crane is down for maintenance or repairs.

Construction of a container wash facility substantially reduced the number of surveys for radioactivity required to ensure no loose contamination remains on the exterior of the containers before shipment. The installation of 14 monitoring and extraction wells enhances the Moab site's groundwater remediation system.

The Recovery Act also funded the removal of a 1,700-foot-long, 35-foot-wide stretch of invasive tamarisk trees along the

*Continued on page 15*

# May 2011

Issue 24

## Contributors

Jessica Anderson  
Kevin Bazzell  
Jazmin Bell  
Sandy Childers  
Cynthia Dayton  
Maren Disney  
Andrew Gabel  
Casey Gadbury  
Cameron Hardy  
Susan Heston  
Patti Jones  
Sunny Katseanes  
Siva Kumar  
John N. Lindsay  
Mark McKenna  
Donald Metzler  
Danielle Miller  
Paivi Nettamo  
Angela Ramsey  
Rob Roxburgh  
Wendee Ryan  
Bobby St. John  
Bill Taylor  
Catherine Thomas  
Joe Walker  
Ben Williams

U.S. Department of Energy  
Office of Environmental Management  
<http://www.em.doe.gov>  
1000 Independence Avenue, SW  
Washington, DC 20585

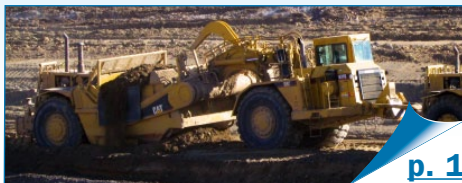


A Recovery Act worker cuts fuel channels from the 4,760-ton bioshield of the Brookhaven Graphite Research Reactor. The Lab is working to dismantle the shield, which was designed to protect personnel from radiation emitted from the graphite pile at the reactor's core. In operation from 1950 to 1968, the reactor was the first of its kind built solely for peaceful research purposes.

## May Newsletter Issue Provides Update on EM's \$6 Billion Recovery Act Program

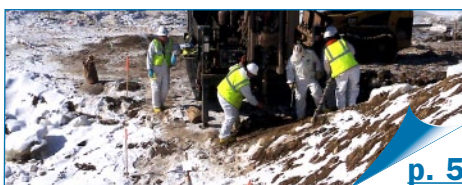
In 2009, the Recovery Act invested \$6 billion in 91 projects across U.S. Department of Energy Office of Environmental Management (EM) sites in 12 states. The funding accelerated cleanup of the Manhattan Project and Cold War while benefiting more than 30,000 workers in a recession. By early May 2011, EM had allocated 99 percent of the funds and made more than \$4.2 billion in Recovery Act payments. Recovery Act workers are on pace to complete the majority of Recovery Act projects by September 2011. This May issue of EM Recovery News offers an update on many of those projects. For example, Oak Ridge recently achieved a significant accomplishment when workers finished demolishing Building K-33, a 1.4 million-square-foot former uranium enrichment facility at the East Tennessee Technology Park. Read about numerous other accomplishments and work still left to be done by workers at all 17 Recovery Act sites, from Savannah River Site, which received \$1.6 billion, to SLAC National Accelerator Laboratory, which received \$14.3 million.





**p. 1**

Moab Mill Tailings Project Marks  
Many Recovery Act Accomplishments



**p. 5**

Argonne Forges Ahead in Waste  
Removal, Facility Demolitions with  
Recovery Act Help



**p. 7**

Oak Ridge Stays on Course for Recov-  
ery Act Completion in September



**p. 9**

Recovery Act Workers Use Robotics  
at Paducah Site Cleanup



**p. 14**

Site Marks Recovery Act Milestone  
with Contaminated Soil Cleanup



**p. 4**

## Recovery Act Accelerates Idaho Site Cleanup, Leads to Numerous Accomplishments

Recovery Act Funds Accelerate Cleanup,  
Reduce Footprint at Hanford Site.....  
.....**page 6**

Savannah River Site Looks Ahead to  
Completion of Recovery Act Cleanup.....  
.....**page 8**

Recovery Act Supports Radiological Study  
to Guide Cleanup Decisions ..... **page 10**

Recovery Act Bolsters Nevada National  
Security Site Environmental Cleanup.....  
.....**page 11**

Two of Three Recovery Act Projects are  
Complete at Los Alamos National  
Laboratory ..... **page 12**

Recovery Act Accelerates Transuranic  
Waste Disposal Across DOE Complex.....  
.....**page 13**

Recovery Act Positions West  
Valley Demonstration Project for  
Decommissioning ..... **page 14**

Recovery Act Investment Brings  
Significant Change to Portsmouth Site  
Landscape ..... **page 15**

Recovery Act Project Brings End to Mound  
Site Cleanup Activities..... **page 16**

Recovery Act Funding Speeds Cleanup at  
Brookhaven National Laboratory **page 16**

Recovery Act Strengthens Tank Farm  
Operations as Treatment Plant Takes  
Shape..... **page 17**

Recovery Act Supports Soil and Debris  
Cleanup, Groundwater Treatment at SLAC  
.....**page 17**



# Recovery Act Accelerates Idaho Site Cleanup, Leads to Numerous Accomplishments

**IDAHO FALLS, Idaho** – Since April 2009, \$468 million from the Recovery Act has accelerated the Idaho site cleanup of Cold War radiological and chemical waste, created jobs, and protected the Snake River Plain Aquifer.

Recovery Act workers efficiently and safely decontaminated and decommissioned excess and obsolete structures, including nuclear reactors, hot cells and spent fuel reprocessing facilities; retrieved buried transuranic waste; and shipped waste out of Idaho.

More than 481,000 square feet of facilities, structures and laboratories have been demolished. One of most notable Recovery Act accomplishments was the removal of the Materials Test Reactor from its large steel, concrete and graphite monolith for burial at an on-site disposal facility.

Demolition of the Fuel Reprocessing Complex (FRC) is close to completion. Built in the 1950s, the FRC was home to the first generation of uranium reprocessing in the U.S. and once formed the center of spent nuclear fuel reprocessing facilities at the site. The complex was used to recover more than \$1 billion of uranium from spent nuclear fuel which was then reused as fuel for government reactors. In 1992, the reprocessing mission was terminated, ending more than four decades of uranium recovery.

In a \$70 million Recovery Act project, workers are removing potentially dangerous sodium from a decommissioned reactor using an innovative treatment process. With the help of technology development funds provided by Environmental Management's Office of Deactivation & Demolition and Facility Engineering, DOE contractor, CH2M-WG Idaho, and several subcontractors, developed a citric acid solution that reacts calmly with the sodium, preventing harm to workers. Sodium cleanup will continue through this summer.

Efficiencies and rapid progress in Recovery Act projects saved \$12 million for the exhumation of targeted buried waste from a quarter-acre portion of Pit 9, a 1960s landfill at the Idaho site. Workers are digging up contaminated waste such as filters and solvents that were buried in the pit and are ahead of schedule to complete the project.

In summer 2010 — five weeks ahead of schedule — crews grouted 21 buried waste locations to inhibit rain and snow melt from infiltrating the waste.

With \$112 million in Recovery Act funding, the waste management team reactivated a hot cell that had been inactive for almost 20 years at the Idaho Nuclear Technology and Engineering Center. The reactivated cell has been used to process and ready remote-handled transuranic waste for shipment to the Waste

Isolation Pilot Plant in New Mexico for permanent, safe disposal.

Recovery Act work at the Advanced Mixed Waste Treatment Project (AM-WTP) concluded in September 2010. Accomplishments include:

- Shipment of an additional 3,715 cubic meters of historically managed transuranic waste out of Idaho to WIPP for safe, permanent disposal.
- Retrieval of 2,051 cubic meters radioactive waste.
- Processing of 1,067 cubic meters of problematic waste.

“By all the metrics used to measure the Recovery Act, we had phenomenal success at AMWTP,” Idaho Cleanup Project Acting Deputy Manager Mark Searle said. “The tenets of the Recovery Act Program were well understood, precisely executed, and the end result was safe and compliant performance that bolstered AMWTP's continued success in meeting its mission.” □

Top photo: Remote manipulators are used to repackage waste inside a hot cell.





A canister of irradiated sodium-bonded nuclear fuel specimens from Argonne's Alpha Gamma Hot Cell Facility is lowered onto a shipping cask for shipment to Idaho National Laboratory.

## Argonne Forges Ahead in Waste Removal, Facility Demolitions with Recovery Act Help



A drill-rig crew takes soil sample bores for analysis as part of decontamination and demolition of Argonne's Building 330, the former site of the historic Chicago Pile-5, the fifth and final member of the Chicago Pile family of pioneering research reactors.

**ARGONNE, ILL.** – With the help of \$79 million from the Recovery Act, Argonne National Laboratory continues to dramatically reduce its inventory of radioactive materials and waste while making significant progress in its decontamination and demolition (D&D) program.

The D&D work focuses on Building 310, the former Reactor Engineering Building, and Building 330, the former site of the historic Chicago Pile-5, the fifth and final member of the Chicago Pile family of pioneering research reactors.

Work on projects funded by the Recovery Act has involved more than 275 Argonne employees and nearly 200 subcontractors.

In December 2010, Argonne shipped about one-third of the Alpha Gamma Hot Cell Facility's (AGHCF) inventory of irradiated nuclear reactor fuel specimens to the Idaho National Laboratory (INL). These sodium-bonded specimens were originally sent to Argonne as part of research at the former Argonne-West facility, now part of INL. Some of this mate-

rial will be used for future research and development work at INL.

Since the Recovery Act waste campaigns began in May 2009, Argonne has shipped more than 120 drums of remote-handled transuranic waste from the AGHCF and the Building 205 K-Wing facility, which was previously used for fuel experiments. The drums were sent to the Waste Isolation Pilot Plant (WIPP) in New Mexico for safe, permanent disposal. Transuranic waste is contami-

[Continued on page 10](#)



# Recovery Act Funds Accelerate Cleanup, Reduce Footprint at Hanford Site

**RICHLAND, Wash.** – The Recovery Act has left its mark throughout the 586-square-mile Hanford Site, building a skilled workforce and accelerating the removal of contaminated waste and buildings left behind from decades of plutonium production.

Every building, gallon of contaminated groundwater, cubic meter of legacy waste and ton of contaminated soil adds to a reduction in the Hanford cleanup footprint, which is on track to measure just 75 square miles by 2015.

Major progress marked DOE contractor CH2M HILL Plateau Remediation Company's past two years of Recovery Act work. The Richland Operations Office's \$1.6 billion from the Recovery Act has led to accomplishments such as:

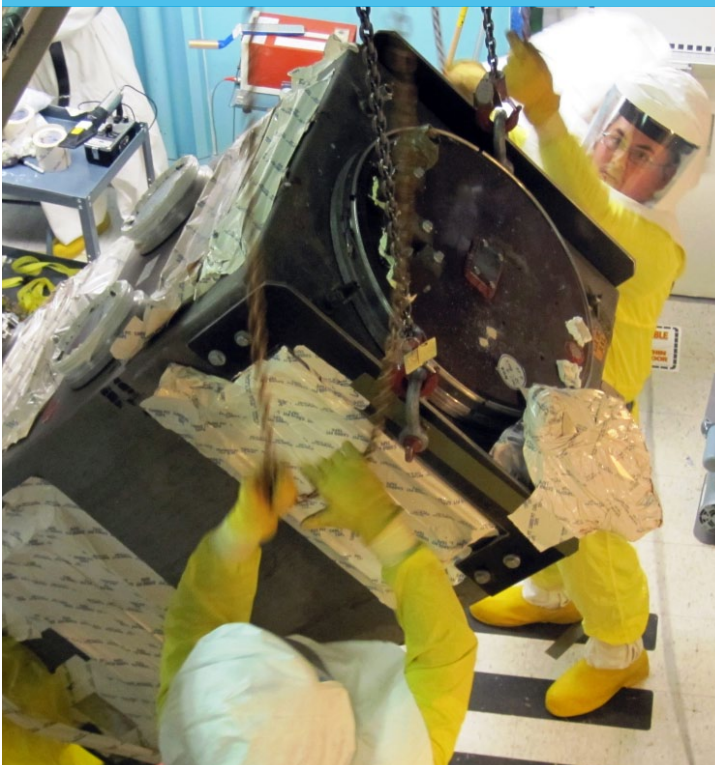
- Removal of more than 20 facilities and hundreds of debris sites from areas formerly used for military activity and research at the Hanford Reach National Monument. These projects reduced the footprint by 143 square miles.
- Construction of the 100-DX groundwater treatment facility to treat contaminated groundwater next to the Columbia River. Construction of a second facility — Hanford's largest — is more than 60 percent complete, with construction scheduled for completion this year.
- Installation of 300 groundwater wells to expand groundwater cleanup efforts and reduce environmental threats to the river. More than 220 wells no longer needed for the cleanup mission also were decommissioned.
- Transformation of the Hanford skyline by demolishing 59 facilities. More than 100,000 square feet of industrial facilities on the Central Plateau and six-football-fields worth of water treatment facilities along the Columbia River were demolished. A matching set of structures plus two river pump houses are scheduled for demolition by September 2011.
- Safe removal of more than 115 large pieces of nuclear materials processing equipment called glove boxes, 22 ancillary structures, and more than 1,000 feet of security infrastructure at the Plutonium Finishing Plant to

[Continued on page 11](#)



Top Photo: Workers lift a large box of transuranic waste covered in protective plastic and a shoring base from an underground storage trench.

Bottom Photo: A section of a glove box is hoisted for removal from Hanford's Plutonium Finishing Plant. Glove boxes are large, contaminated pieces of equipment that once supported plutonium production and processing.



**OAK RIDGE, Tenn.** – Oak Ridge is on schedule and within budget to complete projects funded by \$755 million from the Recovery Act by September 2011.

In 2009, Oak Ridge invested Recovery Act funds in 24 projects. Since then, detailed planning and effective project management have led to savings that are being used for 12 additional projects at Oak Ridge.

The Recovery Act funding has accelerated cleanup, created and saved jobs, significantly reduced the Cold War footprint, and helped Oak Ridge meet regulatory commitments involving soil and groundwater remediation.

“With Recovery Act funding and a common goal, we have safely accelerated the cleanup of the Oak Ridge Reservation,” said John Eschenberg, Oak Ridge Office acting dep-

der way to remove debris from K-33 for permanent disposal.

At the Oak Ridge National Laboratory (ORNL), workers demolished the 2000 Complex and disposed of demolition waste. They also tore down 12 of 34 fa-

demolition projects, including four Biology Complex facilities, Building 9735, and the 9206 Filter House. Removal of those facilities has reduced Y-12’s footprint by more than 150,000 square feet.

Y-12’s Old Salvage Yard, a seven-acre area of old, contaminated scrap metal, has been completely cleared, and workers are characterizing and remediating the soil. Cleanout of Beta 4’s 82,000-square-foot second floor is complete, and cleanup of the 600,000-square-foot Alpha 5 is more than 90 percent complete. Cleanout prepares both facilities for demolition.

Y-12’s West End Mercury Area storm sewer cleanup project will be completed by late summer. The project is making significant progress toward reducing Y-12’s greatest mercury contamination concern. □

## Oak Ridge Stays on Course for Recovery Act Completion in September



Workers demolish Building 3550 in the Oak Ridge National Laboratory’s central campus. It was the twelfth building to be decontaminated and demolished in the 34-facility decontamination and demolition project.



uty manager and assistant manager for Environmental Management.

At the East Tennessee Technology Park (ETTP), Recovery Act workers demolished Building K-33, a 1.4 million-square-foot former uranium enrichment facility, months ahead of schedule. The removal of K-33 contributed to the 60 percent reduction in ETTP’s footprint, bringing the site closer to completion of cleanup activities so it can become available for reuse. Work is currently un-

cilities slated for decontamination and demolition. Progress continues in that project as workers remove contaminated World War II and Manhattan Project buildings from the world-class science complex. Work also continues to remove Building 3026’s highly contaminated hot cells. Two of the six cells have been decontaminated to prepare for demolition.

The Y-12 National Security Complex has experienced significant cleanup success. Workers have completed all six

First and second photos from left: The Y-12 National Security Complex used Recovery Act funds to demolish four Biology Complex facilities. These photos show the site of Building 9211 before and after demolition.

Third and fourth photos from left: With Recovery Act funds, the Y-12 National Security Complex was able to clear the seven-acre Old Salvage Yard. The scrap yard contained scrap metal from decades of past operations.





Recovery Act workers removed the Heavy Water Components Test Reactor vessel, shown here, and permanently disposed it onsite.

## Savannah River Site Looks Ahead to Completion of Recovery Act Cleanup

**AIKEN, S.C.** – The Savannah River Site (SRS) has made significant progress in the cleanup of past nuclear materials production in the two years since the site began its \$1.6 billion Recovery Act program.

Workers imploded a massive cooling tower, made headway in the decommissioning of nuclear reactors that together occupy more than 600,000 square feet of space, and accelerated the removal of a large amount of legacy defense-related waste.

Major SRS Recovery Act projects undertaken by SRS management and operations contractor Savannah River Nuclear Solutions include:

- Decommissioning of the P and R Cold War reactors. Recovery Act workers recently completed grouting of both reactors and associated facilities. The reactors will be sealed in place for hundreds of years to allow the radioactivity to naturally decay. Decommissioning is scheduled

for completion in September 2011.

- Decommissioning of the Heavy Water Components Test Reactor. Workers finished grouting after removing the reactor's dome, vessel, and steam generators. A concrete cover will be built over the reactor's footprint. The project is scheduled for completion this summer.
- Transuranic Waste Disposal. SRS has made progress toward the goal of shipping 5,000 cubic meters of legacy transuranic waste to the Waste Isolation Pilot Plant (WIPP) in New Mexico for permanent, safe disposal by December 2012, six years ahead of the original baseline schedule. As of April 2011, SRS had disposed 1,345 cubic meters of the waste, including some higher activity waste retrieved from long-term storage in earthen mounds.
- Treatment of contaminated soil and concrete at the D Area Thermal Detritiation Unit. In this ongoing proj-

ect, the materials are heated to a high temperature to lower the radioactive levels of tritium, a radioactive form of hydrogen. Once treated, the materials are returned to their excavation sites, saving SRS disposal costs.

- M Area Operable Unit Cleanup. In 2010, SRS celebrated the completion of cleanup of this 40-square-mile industrial site after workers demolished 23 buildings and remediated contaminated soil, groundwater, and underground piping and sewer lines. The Recovery Act accelerated the cleanup of M Area by eight years and reduced SRS's Cold War footprint by about 13 percent. SRS's goal is to reduce that footprint by 75 percent, from 310 square miles to 78 square miles, by September 2012.
- K Cooling Tower Implosion. In 2010, SRS demolished this tower, which was built in 1992 to cool water for the once-active K Reactor. The 450-foot-tall, 345-foot-wide tower weighed more than 52 million pounds. SRS used 1,300 pounds of explosives placed at more than 3,800 locations in the lower portion of the structure for the implosion.

SRS liquid waste contractor, Savannah River Remediation LLC (SRR), is scheduled to complete a total of 41 Recovery Act projects that will accelerate waste processing and tank closure. At the Site's Defense Waste Processing Facility (DWPF), Recovery Act funds supported the installation of bubbler technology and additional enhancements to increase the production of canisters containing vitrified waste. Eight Recovery Act projects support the integration of the Salt Waste Processing Facility (SWPF), which is now under construction. The Recovery Act work will allow SWPF to process vast amounts of salt waste accumulated in the underground tanks. □



# Recovery Act Workers Use Robotics at Paducah Site Cleanup

**PADUCAH, Ky.** — Recovery Act workers are using robotic equipment for the first time at the Paducah Site to clean up old buildings safely and efficiently.

A remote-controlled machine is removing contaminated piping and other systems from the “B” building, one of five structures comprising the C-340 Metals Plant. It is one of three contaminated Cold War complexes being cleaned up with nearly \$80 million in Recovery Act funding.

Similar equipment has been used at other DOE sites, such as Rocky Flats in Colorado and Brookhaven National Laboratory in New York, but never before at Paducah.

The machine’s hydraulic arm can reach about 23 feet and uses cutters to snip materials loose.

“This machine allows workers to remain a safe distance when cutting out process systems,” DOE Paducah Site Recovery Act Project Manager Rob Seifert said. “It also keeps them safely on the ground while reaching high elevations.”

Workers previously stood on lifts and used metal saws to remove old equipment. Now, one person controls the machine with a portable box.

The robotic machine could be used on the Recovery Act cleanup of the C-410/420 Feed Plant — or for the long-term cleanup and demolition of the Paducah Gaseous Diffusion Plant after it closes, Seifert said.

The B building is scheduled to be razed this spring, following the 2010 demolition of two other Metals Plant struc-

Heavy equipment operators gain hands-on training using a robotic demolition machine in the C-340 shipping and receiving area.



tures. The two remaining buildings are being prepared for demolition in 2012.

The Metals Plant spanned roughly 65,000 square feet and operated several decades ago to convert depleted uranium hexafluoride (DUF6) into uranium metal and uranium tetrafluoride.

In September 2010, heavy equipment demolished the C-746-A East End Smelter a year ahead of schedule and \$10 million under budget. Those savings, plus unused management reserve and contingency money, are funding about \$17.8 million in additional cleanup in the C-410/420 Feed Plant.

The Smelter was a 21,000-square-foot facility built in the 1950s as a storage facility and converted in the 1970s to smelt nonferrous metals, primarily nickel. It closed in 1986.

Demolition of the eastern third of the Feed Plant — covering about a half-acre — is anticipated to occur this spring. Placing debris in an on-site landfill will

save about \$1.5 million in disposal costs.

Consisting of nine separate facilities spanning 200,000 square feet, the Feed Plant was used from 1957 to 1977 to manufacture DUF6 and fluorine. The rest of the facility is expected to be cleaned in preparation for 2012 demolition.

More than 100 fluorine-generation cells previously were decontaminated and turned over to private industry for reuse, saving DOE about \$2.5 million in disposal costs. About the size of a chest freezer, the cell worked like batteries in reverse. Electrical currents triggered a chemical reaction that made fluorine.

Recovery Act workers also removed over 60 tons of copper bus bars for reuse. Bus bars are copper plates about a quarter-inch thick, stacked in three or four layers to conduct electricity to operate fluorine cells. □



Workers perform sub-surface sampling in Santa Susana Field Laboratory Area IV.

To date, EPA has collected more than 1,000 soil samples and surveyed more than 150 acres of land for gamma radiation.

The EPA is collecting soil samples to determine the nature and extent of radiological contamination. Additional samples are being analyzed by DOE for possible chemical contaminants in coordination with the California Department of Toxic Substances Control.

Data analysis will be performed to compare results of the EPA's soil tests at SSFL with soil tests conducted miles away from SSFL that are considered representative of ambient background levels. At those areas exceeding the background levels, additional soil testing will determine the extent of chemical and radiological contamination subject to cleanup in the future.

## Recovery Act Supports Radiological Study to Guide Cleanup Decisions

**CANOGA PARK, Calif.** – The U.S. Environmental Protection Agency (EPA) is conducting a radiological study funded by \$38.3 million from the Recovery Act. Under an Interagency Agreement with DOE, the EPA study is taking place in the part of Santa Susana Field Laboratory (SSFL) where the DOE's Energy Technology and Engineering Center is located.

Results of the study will guide cleanup decisions for this portion of SSFL, which was once used for a broad range of energy-related research and development.

DOE closed remaining operations at ETEC in 1988, and the focus turned to cleanup and demolition of facilities, soil and groundwater remediation, and site restoration.

SSFL is located on 2,850 acres of land in the hills between Chatsworth and Simi Valley. The former testing site was developed by DOE's predecessor agency, the Atomic Energy Commission. □

### Argonne Forges Ahead...

*Continued from page 5*

nated with radioactive elements heavier than uranium and requires specialized handling and disposal.

Argonne recently received final approval from the DOE Carlsbad Field Office in New Mexico to package fuel examination waste — a unique category of remote-handled transuranic waste with high ac-

tivity — from the AGHCF for disposal at WIPP. Argonne has begun packaging the waste and plans to ship it to WIPP between May and September 2011.

Building 330 demolition was completed six weeks early in 2010. This summer, Building 330's former site will be restored with native vegetation. Argonne's subcontractor, Clauss Construction, will backfill the excavation, install an asphalt cap over the building's footprint,

and plant native grasses over the rest of the site.

At Building 310, which formerly supported experimental work and waste processing, workers removed asbestos and are decontaminating the building as a prelude to demolition in July 2011. A contract for the D&D work was awarded to DEMCO, Inc., a small business headquartered in West Seneca, N.Y. □





Recovery Act crews remove demolition debris at the Reactor Maintenance, Assembly, and Disassembly Facility.

## Recovery Act Bolsters Nevada National Security Site Environmental Cleanup

**LAS VEGAS** – Since 2009, more than \$50 million from the Recovery Act has accelerated soil remediation, groundwater characterization, building demolition, and waste disposal at the Nevada National Security Site (NNSS).

Thanks to the Recovery Act, the NNSS was able to revisit many projects that had been on hold due to lack of funding. Following are projects completed in their entirety:

- Installation of two groundwater characterization wells on Pahute Mesa. The project helped scientists study the movement of contaminants such as tritium and plutonium from historical underground nuclear testing.
- Demolition of the Reactor Maintenance, Assembly, and Disassembly (R-MAD) and Pluto Disassembly facilities and two structures at the Test Cell C Facility.
- Removal of depleted uranium, remediation of buried ordnance, which are parts of larger bombs or explosives formerly used in testing, and elimination of existing land-use restrictions at the Tonopah Test Range.

- Disposal of on-site low-level and mixed low-level waste from Recovery Act projects. NNSS continues to accept waste from Recovery Act projects from generators across the country, which aids in DOE complex-wide cleanup activities.

### Following are ongoing Recovery Act-funded activities:

- Characterization of five contaminated soil sites and identification of corrective actions.
- Characterization and closure of railroad tracks with low-level waste contamination associated with the Engine Maintenance, Assembly, and Disassembly, R-MAD, Pluto, and Test Cell C facilities.
- Use of drilling data to revise the geologic framework computer model and completion of a related report.

Since the program's inception, Recovery Act funding at NNSS has benefited more than 780 workers. □

## Recovery Act Funds Accelerate Cleanup...

Continued from page 6

prepare the plant for demolition. That infrastructure is no longer needed after workers removed the last of special nuclear material from the plant in 2009.

- Preparation of a massive processing plant canyon, 15 contaminated railcars, and a nuclear facility for demolition.
- Repackaging of 841 cubic meters of transuranic waste for certification and shipment to the Waste Isolation Pilot Plant in New Mexico for safe, permanent disposal.

DOE contractor Washington Closure Hanford continues to make significant progress in Hanford's Recovery Act projects.

Washington Closure is cleaning up the River Corridor by demolishing 312 facilities, remediating 366 waste sites, and placing two nuclear reactors and one nuclear facility in interim safe storage.

Washington Closure also manages the Environmental Restoration Disposal Facility (ERDF). In February, Washington Closure completed the fourth and largest expansion of ERDF by adding two new disposal areas called super cells. The project increased ERDF's capacity by 5.6 million tons to a total of 16.4 million tons. The work was completed seven months ahead of schedule and about \$16 million under budget.

"The Recovery Act has contributed greatly to the tremendous amount of work being accomplished at Hanford, which has increased the waste volume significantly at ERDF," Washington Closure Director of Waste Operations Bruce Covert said. □





These photos show the DP East area of Los Alamos National Laboratory's Technical Area 21 before the demolition of 10 buildings, above, and after demolition, below.

## Two of Three Recovery Act Projects are Complete at Los Alamos National Laboratory

**LOS ALAMOS, N.M.** – With two of three projects completed ahead of schedule and under budget, Recovery Act work at Los Alamos National Laboratory is nearing completion.

The Lab received \$212 million from the Recovery Act to complete three projects: decontaminate and demolish 24 Manhattan Project and Cold War buildings; install 16 groundwater monitoring wells; and excavate the Lab's oldest waste disposal site, Material Disposal Area B (MDA-B). The demolition and wells projects are finished, and the excavation of MDA-B is scheduled for completion this summer.

"Recovery Act funding allowed us to accelerate environmental cleanup at Technical Area 21 (TA-21)," said Allan

Chaloupka, director of the Recovery Act projects at the Lab. "We also created or saved nearly 450 jobs during our hiring peak last summer, and awarded much of the work to four different small business subcontractors."

In addition to finishing ahead of schedule, efficient subcontracting and waste segregation during the demolition project resulted in \$13 million in savings that were used to demolish additional buildings at TA-21.

Some of the 16 wells were installed as far as 1,450 feet below ground. Efficiencies in mobilization and purchasing brought that project in about \$5 million under budget. The savings were used for additional cleanup at MDA-B.

"This work was done efficiently and safely," Chaloupka said. "Despite winter weather and other challenges, our crews did a great job completing these projects in a timely and efficient manner."

The final project, the excavation of MDA-B, is more than 73 percent complete. Used from 1944 to 1948, MDA-B is the Lab's oldest waste disposal site. Excavation is occurring within sturdy metal structures that resemble airplane hangars.

"In addition to the economic benefits of job creation, these projects provide long-term value to the community through environmental remediation that makes land available for potential reuse," Chaloupka said. "It's all about environmental stewardship." □



## Recovery Act Accelerates Transuranic Waste Disposal Across DOE Complex

**CARLSBAD, N.M.** – The Waste Isolation Pilot Plant (WIPP) is using \$172 million from the Recovery Act to upgrade infrastructure, improve operations and accelerate removal of transuranic waste from several sites across the DOE complex.

### WIPP's major Recovery Act accomplishments include:

- Completion of legacy transuranic waste cleanup at the Nevada National Security Site in July 2009, General Electric Vallecitos Nuclear Center in June 2010, and Lawrence Livermore National Laboratory's Site 300 in June 2010. Legacy transuranic waste cleanup is on track for completion by September 2011 at Lawrence Berkeley National Laboratory in California, Argonne National Laboratory in Illinois, Bettis Atomic Power Laboratory in Pennsylvania, NRD (Nuclear Radiation Development) LLC in New York, and Sandia National Laboratory in New Mexico. Transuranic waste is shipped to WIPP, where it is permanently disposed safely in rooms mined out of an ancient salt formation more than 2,100 feet below the surface.
- The newly reconstructed WIPP South Access Road. The road, which reopened to traffic in January 2011, now features wider driving lanes and shoulders. WIPP has requested use of the road to accommodate shipments of transuranic waste to WIPP for safe, permanent disposal. The new route would allow shipments entering New Mexico from the southern U.S. to travel a shorter distance to WIPP. For example, shipments from the Savannah River Site in South Carolina would travel 188 less miles using the new route, resulting in savings of about \$1,080 per trip.
- Construction of a pond to capture storm water runoff from the large salt pile resulting from mining operations. The pond has a larger



capacity than previous storm water management facilities at the site. WIPP began using the new pond in February 2010.

- Purchase of new equipment and infrastructure projects to improve waste processing and disposal operations. WIPP purchases include a multipurpose vehicle for loading, hauling, and dumping mined salt underground, two 13-ton forklifts, and two trailer jockeys. The site acquired new remote-handled waste emplacement equipment, including an emplacement machine, light-weight facility cask and shield valve. Equipment installation is ongoing as WIPP prepares to receive transuranic waste in new transportation packages called TRUPACT-III, which are also funded by the Recovery Act. WIPP completed upgrades to a crane used to move remote-handled transuranic waste casks and roof repairs to the remote-handled waste processing bay. □

Transuranic waste cleanup is complete at several sites across the DOE complex. The Recovery Act accelerated some of those cleanups.



Right, top: The Recovery Act funded the purchase of trailer jockeys for use in WIPP operations.

Right, middle and below: These photos show a Recovery Act-funded storm water runoff pond at WIPP during and after construction.



DOE and Accelerated Remediation Company workers gather in front of the final shipment of contaminated soil from North Field at Separations Process Research Unit on Sept. 22, 2010. The contaminated soil was shipped to a disposal facility in Utah.

## Site Marks Recovery Act Milestone with Contaminated Soil Cleanup

**NISKAYUNA, N.Y.** – In a Recovery Act milestone at the Separations Process Research Unit (SPRU), workers safely completed the removal of contaminated soil excavated from the North Field, a

disposal area for former operations at the Cold War research facility.

The removal of 9,400 cubic yards of contaminated soil in 2010 was completed about \$1 million under budget and four years ahead of schedule with the help of \$13.8 million from the Recovery Act.

“This shipment of contaminated soil marks a major accomplishment for SPRU,” EM Senior Policy Advisor Colin Jones said. “Recovery Act funding allowed us to accomplish this much earlier than our target date of 2014.”

A 25-member work crew from contrac-

tor Accelerated Remediation Company, a small business, shipped the contaminated soil to a disposal facility in Utah.

The excavation was impeded by harsh winter temperatures that caused the soil to harden, but SPRU found an innovative solution by attaching a rotary tiller to the arm of the excavator. The tool broke up the soil with improved precision, preventing over-excavation.

The remediation project at the 15-acre North Field brought EM closer to completing legacy waste cleanup at SPRU.



## Recovery Act Positions West Valley Demonstration Project for Decommissioning

**WEST VALLEY, N.Y.** – Thanks to nearly \$63 million in Recovery Act funds, the West Valley Demonstration Project (WVDP) was able to complete several cleanup projects and prepare for the first phase of site decommissioning.

WVDP’s Recovery Act accomplishments include:

- Construction of an underground permeable treatment wall that prevents radioactive contaminants from migrating from the WVDP site.
- Installation of a system to evaporate liquids and dry the four underground waste tanks and vaults in the site’s underground Waste Tank Farm. WVDP completed the project to prevent the tanks from leaking into the environment.

- Processing of 10,155 cubic feet of contact-handled radioactive waste. This work is part of an ongoing effort to dispose of the waste in storage at the state-owned, federally-operated site.

Crews are scheduled to complete two remaining Recovery Act projects in the Main Plant Process Building by the end of June 2011. Completion of these projects helps prepare the five-story structure for demolition, which will be a major part of site decommissioning.

Work is under way to clean out the Main Plant’s highly radioactive Off Gas Cell, which was used in former commercial nuclear fuel reprocessing activities at the site. The Recovery Act funded the installation of shielding to protect workers from radiation imbedded in the walls and floor of the cell while the piping and tanks are removed and packaged for disposal.

Elsewhere in the Main Plant, workers are removing asbestos-containing material. □





A truck carrying a container full of tailings exits the underpass (center of photo) and heads up the paved haul road to the rail load out area.

## Moab Mill Tailings Project Marks Many Recovery Act Accomplishments...

Continued from page 1

riverbank adjacent to the well field. The workers are planting native plant species there to improve aesthetics and encourage wildlife.

At the Crescent Junction site, Recovery Act funds are being used to excavate the second portion (about 45 acres) of the

disposal cell and place final cover material on the compacted tailings in the cell. About 170,000 cubic yards of cover material has been placed on the portion of the disposal cell that has met the final grade for tailings material.

More than 200 employees were hired with the Recovery Act funds received by the Moab Project.

"Our Recovery Act project commitments were to ship an additional 2 million tons of tailings and support 160 jobs. We went beyond both of those commitments," Moab Federal Project Director Donald Metzler said. "In addition, the

Moab Project plans to complete all of its Recovery Act scope by the end of June 2011, several months ahead of schedule."

The Recovery Act shipments account for roughly 63 percent of the total 3.8 million tons of mill tailings shipped to date from the Moab site.

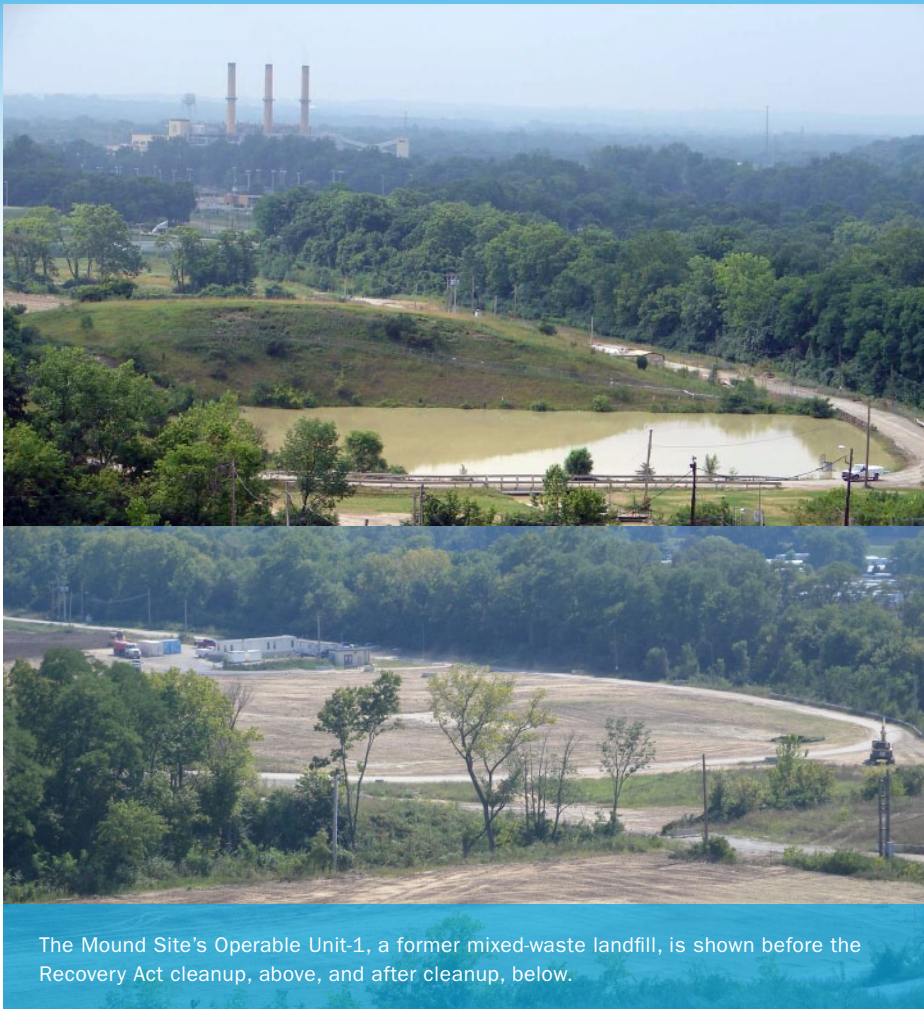
The tailings are remains from processing uranium ore for national defense programs. □

## Recovery Act Investment Brings Significant Change to Portsmouth Site Landscape

**PIKETON, Ohio** – The Recovery Act brought notable changes to the Portsmouth Site, investing in workers who tore down Cold War facilities, treated groundwater contamination, and removed infrastructure that previously supported uranium enrichment.

Portsmouth's accomplishments funded by nearly \$120 million from the Recovery Act include:

- Demolition of a former chemical engineering building, which reduced the Cold War legacy footprint by 8,000 square feet. The project was completed four months ahead of schedule in June 2010.
- A highly successful in-situ treatment that reduced trichloroethene (TCE) levels by more than 95 percent in a 70,000-square-foot groundwater contamination source area with the highest TCE concentrations onsite.
- Removal of the 21-acre X-633 Cooling Tower Complex, which consisted of four separate towers and a pump house. The project in the northeastern portion of the Portsmouth Gaseous Diffusion Plant was completed seven months ahead of schedule in June 2010.
- Demolition of structures at a former high-voltage electrical switchyard that was de-energized in 2008. The 20-acre site had supplied power to one of three uranium enrichment process buildings at the site. The switchyard demolition, completed in December 2010, included removal of 160 electrical towers as tall as 120 feet, a two-story control room, and two switchgear houses.
- Removal of the cooling towers and switchyard generated more than 8,000 tons of clean scrap metals and other materials that have been provided to the Southern Ohio Diversification Initiative for recycling to further promote economic activity. More than \$2.5 million has been returned to the community through these efforts.
- Repackaging and disposition of about 1,700 metric tons of excess uranium materials in storage, reducing the inventory by more than 40 percent. □



The Mound Site's Operable Unit-1, a former mixed-waste landfill, is shown before the Recovery Act cleanup, above, and after cleanup, below.

## Recovery Act Project Brings End to Mound Site Cleanup Activities

**MIAMISBURG, Ohio** – The Recovery Act invested \$17.9 million in the completion of EM's legacy cleanup activities at the Mound Site in 2010.

Recovery Act workers disposed nearly 20,000 cubic meters of soil and demolition debris in the cleanup, which focused on the Operable Unit-1, a former mixed-waste landfill at the 306-acre site. The Recovery Act cleanup was the final remediation project at Mound.

The federal government is in the process of transferring ownership of the site to the Mound Development Corporation, a community reuse organization.

Mound supported the nation's nuclear weapons and energy programs until decommissioning began in 1993. □

## Recovery Act Funding Speeds Cleanup at Brookhaven National Laboratory

**UPTON, N.Y.** – Brookhaven National Laboratory and its contractor, Brookhaven Science Associates (BSA), are on pace to successfully complete three major projects funded by \$71 million from the Recovery Act by September 2011.

Recovery Act workers have made substantial progress in two reactor decommissioning projects. The third project — cleanup of legacy contaminated soil — was completed in 2009.

### The Lab's Recovery Act accomplishments include:

- Cleanup of contaminated underground utilities and other remedial actions that allowed the High Flux Beam Reactor to safely enter hibernation until radiation levels naturally decay so the facility can be demolished after a safe storage period not to exceed 65 years. The reactor had produced neutrons for research.
- Remediation of radiological contaminated soil around the perimeter of the former Hazardous Waste Management Facility. The project was finished in 2009.
- Removal of a 700-ton graphite pile at the core of the Brookhaven Graphite Research Reactor (BGRR), the world's first reactor built solely for peaceful research purposes. The project was completed in 2010.

The Lab is scheduled to finish dismantling BGRR's 4,760-ton bioshield and build an impermeable cap over the grounds of the reactor building for groundwater protection by September 2011. □





Crews recently finished construction of a 10,000-square-foot climate-controlled storage facility at Hanford. The Recovery Act-funded facility supports the controlled storage needs for base operations, maintenance, and tank farm operations by providing a safer, more efficient distribution system.

## Recovery Act Strengthens Tank Farm Operations as Treatment Plant Takes Shape

**RICHLAND, Wash.** – The Office of River Protection (ORP) continues to make steady progress on a number of Recovery Act-funded projects at Hanford's tank farms.

Through April 2011, ORP completed nearly 80 percent of the work funded by \$326 million from the Recovery Act.

Recovery Act projects are already making a difference in the farms, as funds are being used to upgrade tank farm infrastructure, extend the life of critical operating facilities, and prepare for the Waste Treatment Plant (WTP) being built. The projects are also creating a safer, more efficient environment for tank farm workers.

To date, crews have successfully removed a series of old waste transfer line cleanout boxes no longer used at the farms. The project required workers to carefully dig by hand around the boxes to avoid rupturing underground utilities. Crews also used special equipment when removing the boxes to make sure no liquids or flammable gases escaped.

An asphalt barrier placed over the top of one of the tank farms to prevent rain and snow melt from seeping into the soil and potentially driving contamination further underground is proving successful. In the seven months since its completion, the barrier has diverted

nearly 300,000 gallons of runoff from the tank farms to a nearby evaporation basin. The basin is lined with material to prevent it from leaking and is covered with soil, native plants and grasses to help drink up the moisture.

Crews recently completed a 10,000 square-foot, climate-controlled storage facility to improve maintenance and operations in the tank farms. The Recovery Act-funded warehouse will help consolidate materials currently housed in other site facilities and provide office space for a handful of workers.

ORP's goal is to complete the majority of Recovery Act-funded projects by July 31 — two months ahead of schedule. Those projects include:

- Efforts to extend the lifespan of facilities critical to DOE's long-term mission of tank waste retrieval and treatment by upgrading aging ventilation and electrical systems, pipes, hoses, and exhausters.
- Designing innovative technologies to speed waste retrieval and increase the amount of tank space by consolidating existing waste.
- Developing systems needed to safely transfer high-level waste to WTP.

□

## Recovery Act Supports Soil and Debris Cleanup, Groundwater Treatment at SLAC

**MENLO PARK, Calif.** – Recovery Act workers are on track to remove more than 30,000 cubic yards of contaminated soil and debris from the SLAC National Accelerator Laboratory by September 2011.

The Recovery Act invested \$14.3 million in legacy cleanup activities at SLAC. In addition to removing contaminated soil and debris that is shipped to local disposal facilities, Recovery Act workers installed three new groundwater treatment systems.

The DOE Office of Science collaborated with the EM Oakland Projects Office on the Recovery Act work to investigate and remediate legacy soil and groundwater contamination from past operations at SLAC.

The longest linear accelerator in the world — at two miles in length — is located at SLAC, a multi-program national research laboratory for particle physics, particle astrophysics and cosmology, photon science, and accelerator research and development.

□

FOR MORE INFORMATION ON  
EM RECOVERY ACT WORK PLEASE VISIT:

<http://www.em.doe.gov/emrecovery/>

<http://www.recovery.gov>

<http://recoveryclearinghouse.energy.gov>

EMAIL ANY QUESTIONS OR COMMENTS TO:

[EMRecoveryActProgram@em.doe.gov](mailto:EMRecoveryActProgram@em.doe.gov)

OFFICE OF ENVIRONMENTAL MANAGEMENT (EM)



U.S. DEPARTMENT OF  
**ENERGY**

OFFICE OF  
**ENVIRONMENTAL  
MANAGEMENT**

U.S. Department of Energy

<http://www.em.doe.gov>

1000 Independence Avenue, SW

Washington, DC 20585